Mr. DIRKSEN. Mr. President, I move to lay that motion on the table.

The motion to reconsider was laid on the table.

PROCEDURE FOR CERTAIN REPORTS ON DEVELOPMENT OF LAND AND WATER RESOURCES

Mr. JOHNSON of Texas. Mr. President, I move that the Senate proceed to the consideration of Senate Resolution 148, Calendar No. 1188.

The PRESIDING OFFICER. The question is on agreeing to the motion of the Senator from Texas.

The motion was agreed to; and the Senate proceeded to consider the resolution (S. Res. 148) to prescribe procedures and contents for reports to the Senate by executive agencies with respect to proposed projects for conservation and development of land and water resources, which had been reported from the Committee on Interior and Insular Affairs with amendments.

ORDER FOR RECOGNITION OF SENATOR ELLENDER ON TUESDAY NEXT TO DISCUSS DEFENSE, AID, AND TRADE PROGRAMS

Mr. JOHNSON of Texas. Mr. President, I should like to announce for the information of Senators that the distinguished senior Senator from Louisiana [Mr. ELLENDER] will address the Senate on Tuesday next in a statement of some 3 or 4 hours, in which he will review his study, which was undertaken during the time Congress was in recess, of our defense, aid, and trade programs.

I should like all Senators to be on notice that the Senator from Louisiana desires recognition early on Tuesday. At that time he will make a statement of considerable length. I ask unanimous consent that he be recognized immediately after the morning hour on Tuesday next.

The PRESIDING OFFICER. Without objection, it is so ordered.

STATEMENT BY PREPAREDNESS INVESTIGATING SUBCOMMITTEE OF THE COMMITTEE ON ARMED SERVICES.

Mr. JOHNSON of Texas. Mr. President, I have a very brief statement which I should like to present to the Senate, if my colleagues will indulge me.

The Senate Preparedness Subcommittee today concluded its current series of hearings into the satellite and missile programs with the adoption of a unanimous statement, in the nature of an interim report.

That statement expressed the sense of unity that the committee has as to the urgent need for strengthening our country's defenses. It expressed the kind of unity which I believe Americans desire.

We tried to state the facts which give cause for foreboding and the facts which give cause for hope. We stated those facts not as members of political parties but as servants of the Senate reporting to the Senate and to the people of the Nation.

Our country is entering a new period of history in which the total resources of America must be brought to their greatest development. No segment of our economy or of our life must be ignored or neglected.

Our programs, our policies and our practices must all be in good working order. A full national effort is required and this can be achieved only by people working together.

The goal is not merely to imitate some Soviet missile or some Soviet achievement. This attitude could lead us into a hypnotic trance in which we would forget that our true strength is our freedom.

That is a fundamental which we must not forget.

We would lose much more than we would gain if we tried to match totalitarian accomplishments by adopting totalitarian methods and values.

Our need to mobilize today flows from a necessity of forging ahead to broader frontiers of freedom—not merely from the need of catching up with the Soviets.

We must not fail because we sell short the potential of a free society. We must succeed by unleashing our minds, unleashing our capacity, and moving forward with the great force, vigor, and imagination of which we are capable.

I believe that spirit dominated the deliberations of the Senate Preparedness Subcommittee.

I do not mean that we are in agreement on every point presented to us in some seven-thousand-odd pages of testimony. The members of the subcommittee will differ on many specific points. But we see the dangers before us through the single perspective of Americans determined that freedom shall survive.

I wish to express my deep appreciation to the majority and minority members of the subcommittee. Without their wholehearted cooperation, the enterprise in which we have engaged would not have been possible.

I wish to express my great admiration and respect for our counsel, Mr. Edwin L. Weisl, who gave freely of his great talents and energies to bring about this report; to his associate, Mr. Cyrus R. Vance, and to the many other staff members who contributed to the report.

For the benefit of the Senate, I wish to read the committee's statement, which is brief. Let me say, as I think I stated earlier, that there were 10 members present, all of whom approved this statement.

Approval of the following statement was voted by the members of the Senate Preparedness Committee: Senators JOHNSON (chairman), KEFAUVER, STENNIS, SYMINGTON, and Senators BRIDGES, SALTONSTALL, and FLANDERS. In addition, the other members of the Senate Armed Services Committee who were present at the meeting—Senator SMITH of Maine, CASE, and BUSH—indicated their approval of the statement.

We have now concluded our current set of hearings. On behalf of the subcommittee in consultation with other Members, I am making a brief statement.

No responsible civilian or military leader in the Government can do aught but face with deep foreboding the current prognoses of the outcome of general thermonuclear war. The subcommittee feels that the problems involved in this hearing are of immediate urgency to our Government and our people.

For the past 110 days, this subcommittee has been engaged in an unusual enterprise. It is a review of the Nation's present and future defense posture in the right of a rapidly evolving science and technology.

The subcommittee has heard some 70 witnesses. About 200 experts have been interviewed. Questionnaires have been sent to leaders of science, education, industry, and government. Some 7,000 pages of testimony are before us.

This inquiry has been one of the most thorough in my memory. It had to be because the subject matter did not permit anything except a careful, prudent, thorough approach. I believe both majority and minority Members will agree with that point.

In the course of our investigation, I hope we have been able to present to our people important facts. I know that it has been an educational process for me, and, I believe, for the other members of our group.

We began with a simple—but revolutionary—fact. It was that for the first time in all history, a man-made satellite was placed into an orbit around the earth.

There were many who realized that this was an inevitable development of the march of science. But the circumstances under which it happened were startling and brought into sharp focus facts which had been known previously but not fully appreciated.

We had expected to be first with this achievement. In fact, we have yet to prove second—although our own achievement in this field is not very far away. The winner was the Soviet Union.

From the beginning, however, it developed that there was much more at stake than the prestige of being first.

There is no evidence that the satellite is a weapon now.

But it has two important implications.

First, it demonstrates beyond question that the Soviet Union has the propulsive force to hurl a missile from one continent to another.

Second, the Soviet Union has gathered basic information about outer space.

These two facts raised a number of disturbing questions. We set out to explore those questions and determine the answers. On the basis of sworn testimony by top scientists, leading industrialists, and Government and military officials, it can now be said:

First. The Soviet Union leads the United States in the development of ballistic missiles.

Second. The Soviet Union leads the United States in number of submarines, which raises the possibility of attack with modern weapons or missiles—although the indications are that we are ahead in the production of atomic submarines.

Third. The Soviet Union is rapidly closing the gap in manned air power—and, at present rates, will surpass this country in a comparatively short time.

Fourth. The Soviet Union has a system which enables it to develop new weapons in substantially less time than the United States.

Fifth. The Soviet Union has led the world into outer space.

Sixth. The Soviet Union is producing scientists and technicians at a rate substantially greater than is our country.

These facts do not give cause for comfort. But we do not consider them a cause for despair or hopelessness. We regard them as a challenge to all Americans.

There is nothing in the record to indicate that America has lost its vitality or its capacity to produce in time whatever we need to retain our present power to strike devastating blows—blows of almost total destruction—at any aggressor.

The facts which we have been investigating are the facts of the future. And while the future is very close—extremely close—it is still under our control.

There is no point in arguing that things might have been different had things been done differently in the past. Everybody on this committee is willing to concede that point.

The past is already for historians. Let us seek solutions so that the future may be written by free world historians.

Since sputnik I was put into orbit, and this inquiring, began, the Secretary of Defense has taken the following actions:

Overtime restrictions have been removed from the ballistics programs and some of the other high priority programs.

Basic research projects have been restored to former levels.

The Army has been ordered into the satellite program.

Production of the Thor and Jupiter missiles has been authorized.

The development of the Atlas missile has been stepped up.

Development of the Polaris missile system has been accelerated.

The Army has received a go-ahead for developing a new, solid fuel missile.

An advanced research project agency has been authorized.

An office of Director of Guided Missiles is now in being.

Development of antisubmarine warfare capability has been stepped up.

Steps to disperse the Strategic Air Command are under way.

The Air Force has been authorized to go ahead with an early warning program against missiles.

The Army has been assigned the task of developing an antimissile system.

The Secretary of Defense has appointed consultants and has promised to come to Congress as soon as possible with recommendations to improve Defense Establishment through organizational changes.

I may say, for the information of the Senate, that the Secretary of Defense told us yesterday that he was hopeful he would be in a position to make positive recommendations within the next few weeks, perhaps by late March or early April.

These steps are admittedly only a beginning. There are many steps still to be considered. And it is heartening that the Secretary of Defense is keeping an open mind on those steps and has pledged decisions and greater actions when such actions are necessary as soon as possible.

The committee has received many urgent recommendations. The principal areas covered, though not necessarily in the following order of priority, upon which decisive action must be taken are:

First. Modernize and strengthen the Strategic Air Force.

Second. Step up the dispersal of SAC bases.

Third. Put more effort into developing antimissile missiles.

Fourth. Improve our early warning system for manned aircraft and accelerate the development of an early warning detection system for ballistics missiles.

Fifth. Modernize and strengthen ground and naval forces.

Sixth. Provide an adequate airlift for ground troops.

Seventh. Pour more effort into our antisubmarine program.

Eighth. Step up production schedules of Atlas, Thor, Jupiter, and accelerate the development of Titan.

Ninth. Reduce lead time in the development of weapon systems by cutting down on decision time and by simplifying procurement procedures.

Tenth. Provide for a freer exchange of scientific and technical information between the nations of the free world.

Eleventh. Start work at once on the development of a rocket motor with a million-pound thrust.

Twelfth. Give serious attention to the question of shelters and stockpiles for civil defense.

Thirteenth. Reorganize the structure of the Defense Establishment.

Fourteenth. Provide increased incentives for the retention of trained personnel in the military services.

Fifteenth. Accelerate and expand research and development programs, provide funding on a long-term basis, and improve control and administration within the Department of Defense or through the establishment of an independent agency.

Sixteenth. Put more effort in the development of manned missiles.

Seventeenth. Accelerate the development of the Polaris missile system.

The recommendations will all receive the careful consideration of the committee. They will be evaluated in the light of facts—carefully, thoroughly, and prudently.

There is another point I should like to make. The responsibilities of this subcommittee are limited to defense. But we have reached a stage of history where defense involves the total effort of a Nation.

We have been led into fields which will have to be explored by others with proper jurisdiction and with greater background. But these fields are related to our principal responsibility—the defense of our country.

There is, of course, the highly important field of education, to which the able junior Senator from Arkansas [Mr. FULBRIGHT] has referred so eloquently and at length this afternoon. It is obvious that all our plans for the future will be frustrated if we do not foster the training of our children along broad lines through greater concentration on science and mathematics without neglecting the humanities.

We can produce the weapons of survival with what we have now. But the missiles which are so dreaded today may prove obsolete almost as soon as they become realities.

There can be no adequate defense for the United States except in a reservoir of trained and educated minds.

Even more important, however, is the fact that there can be no security for the United States or any other country in weapons. The most accurate and destructive missile yet conceived can bring us nothing but a stalemate.

We prefer a stalemate to defeat and slavery. Let there be no mistake about that.

I am happy that the distinguished junior Senator from Minnesota [Mr. HUMPHREY] is on the floor, because I want him to follow the last lines of this intermediate report.

But the same forces, the same knowledge and the same technology which are producing ballistic missiles can also produce instruments of peace and universal cooperation.

We are engaged in a race for survival and we intend to win that race. But the truly worthwhile goal is a world of peace—the only world in which there will also be security.

The immediate objective is to defend ourselves. But the equally important objective is to reach the hearts and minds of men everywhere so the day will come when the ballistic missile will be merely a dusty relic in the museums of mankind and men everywhere will work together in understanding.

Mr. HUMPHREY. Mr. President, will the Senator yield?

Mr. JOHNSON of Texas. I am happy to yield to my friend from Minnesota.

Mr. HUMPHREY. I am happy indeed that I was in the chamber this afternoon when the majority leader made his intermediate report. I know it would have been a temptation for anyone in the Senator's position to have delivered a very pointed and even a caustic report, which would have been interpreted by some as partisan.

It would have been possible for the majority leader and the majority members of the committee to have assessed political blame.

I believe the majority leader, in his report, has relied upon the intelligence of the American people as to where any blame or fault may lie, and as to whether the recommendations which have been placed before us are sound and adequate.

I wish to commend the Senator from Texas and his committee. The intermediate report should be classified as "must" reading for every citizen of this Republic. It will also be reassuring, I am certain, to our allies, because it

demonstrates the active, alert, keen, and dedicated interest of one of the coordinate branches of the Government, namely, the Congress, along with the executive branch of the Government.

I add these few words: Just as the subcommittee on preparedness is in the process of reviewing our basic military needs and our defense needs, so the entire area of American foreign policy will come under review, and needs to, in the same spirit, I may say, of constructive proposals and careful evaluation. When we find weaknesses and mistakes, we must correct them, instead of abusing one another. Where we see need for progress and new proposals, we must have the boldness to undertake them and carry them out.

Mr. JOHNSON of Texas. Mr. President, if the Senator will permit me to do so at that point, I should like to congratulate the committee of which he is a member for such worthy objectives and such high motives and such desirable proposals as he has enunciated, in an effort to seek the truth and in order that the United States may be worthy of the leadership of the free world, in which we take so much pride.

Mr. HUMPHREY. I am of the opinion, I may say to the Senator from Texas, as I conclude my remarks, that the American people are so deeply concerned about the future of their country and about their present condition, that they will look with a certain amount of disdain and justifiable disgust upon Congress if our efforts to study the defense and foreign policy posture of our Nation, and if our efforts to strengthen both our military and foreign policy program, are treated in too rabid and partisan a manner.

Needless to say, there will have to be discussions, and in some areas disagreement. I believe we must be able to disagree in such a manner as will enable constructive alternatives to be offered.

I have spoken on occasion, very bluntly, concerning the foreign policy of our country. I shall do so in the future. I shall not chastise those who are in charge of it, but rather I shall offer what I hope will be fruitful and constructive suggestions to those who will continue to have responsibility.

I hope the Senator from Texas, the majority leader, will permit me to associate myself with the worthy objectives which have been expressed here today in the interim report. I am not a member of his subcommittee. I can say that the concluding paragraphs of that report are, of course, the spirit of the Nation and the hope of mankind.

It is my intention, as the chairman of the Subcommittee on Disarmament, to present to the Senate next week a statement of what I believe has been going on in this very difficult, complex, uncertain, and as yet, fruitless field, and to offer some constructive suggestions in that particular area.

I would only say that the hope of disarmament, or the hope which the Senator from Texas outlines, is possible only if this Nation can survive, because it is a truth that the leadership of free men rests in the Government of the United States and in this Chamber.

If this Government and this Nation are in peril, and if by any unhappy set of circumstances we should be weakened or destroyed, then I honestly believe that the hope for a world in which freedom can live will have been lost.

Mr. JOHNSON of Texas. Mr. President, I am indeed apreciative of the contribution which my able friend from Minnesota has made to the discussion. I am delighted that he should feel justified in associating himself with the statement made by the entire membership of our subcommittee.

I should not want this opportunity to pass without the Senator from Minnesota being informed that in the days ahead, when he travels down the rugged, rough road looking for peace, he will have my prayers and my support because, Mr. President, if the only thing we have to look forward to is the spending of $40 billion or $50 billion a year to negate the expenditures of another great power we will, at best, be letting it all go down the drain.

Somehow, somewhere, the great minds which have done so much to bring us modern implements, great adventures in science, and great discoveries, must be able to find a solution whereby men can live in the world together. If not, the road ahead will not be a very happy one.

Mr. YARBOROUGH. Mr. President, I desire to add my words of appreciation to those of the distinguished Senator from Minnesota concerning this message of great importance from the Subcommittee on Preparedness. I express my admiration for the wonderful work which has been done by the subcommittee, particularly by its chairman, the distinguished senior Senator from Texas, of whom we are so proud.

I particularly commend him, not merely for the report upon the present state of our defense and about what has not been done, but, more than that, for the inclusion in the report of a set of present objectives, without awaiting the final report, to give America some goal toward which to work in preparation for the long pull.

Mr. JOHNSON of Texas. I thank my friend for his complimentary statement. He is always generous and kind to me. He knows I reciprocate his admiration.

Mr. MANSFIELD. Mr. President, I wish to join with my colleagues in congratulating the distinguished majority leader upon the responsible attitude he has shown, not only in conducting the hearings of the Senate Subcommittee on Preparedness, but also in being able to cause members holding diverse views to issue a unanimous report. This is another indication of the sense of responsibility which the distinguished Senator from Texas has shown, not only since he has been the leader of the majority party in the Senate, but also in the days when he first became a Member of the Senate.

It is a pleasure, in view of what has happened in recent days, to see that this sense of responsibility is still paramount. I am hopeful that the nonpartisanship—or, as one of our colleagues on the other side of the aisle referred to it a short while ago, the unpartisanship—on the part of the Senate Subcommittee on Preparedness will be the norm rather than the exception in the days ahead as the subcommittee undertakes to continue its hearings. The country can be confident that a good job has been done and that the unanimous recommendations of the subcommittee will have good and lasting results.

Mr. JOHNSON of Texas. I thank my friend from Montana.

A CHALLENGE TO THE AMERICAN EDUCATION SYSTEM

Mr. MANSFIELD. Mr. President, I find myself in the happy position of following in the footsteps and under the leadership of the Senator from Arkansas [Mr. FULBRIGHT], who this afternoon made an outstanding speech on the condition of the American educational system. I am delighted that the Senator from Arkansas made the speech which he did.

In supplementing what he has said, I wish at this time to introduce a bill which would amend Public Law 507 by giving the National Science Foundation an expanded role in granting scholarships for study in the sciences and linguistics.

Mr. President, the second session of the 85th Congress is confronted with some of the most difficult and momentous problems in the history of this Nation. They are problems and issues which will affect the stature and future of the United States, both at home and abroad.

I speak of civil rights, the missile and defense program, foreign aid, reciprocal trade, resources development, a new farm program, and a program to strengthen and regain our technological and scientific supremacy. It is the latter of which I would like to speak today.

Several months ago we found ourselves second to the Soviet Union in the race for technological supremacy in the field of missiles and rockets. The Russians have put two satellites into outer space; they have announced that they have put the first atomic-powered ocean vessel into operation, and are boasting of greater things to come in satellites. And in spite of the fact that our missile and rocket programs have been speeded up to a crash basis the United States has not yet fired its first small satellite into outer space. All in all it has been a serious blow to our security and prestige throughout the world.

Why did it happen and most important of all how can we regain our superiority?

There are a number of reasons why we find ourselves in this spot but that is not the issue I am concerned with today. Today my only concern is how can we prevent the reoccurrence of this situation. One solution is through a sound and thorough program for training increased numbers of scientists, language specialists, technicians, and engineers, and seeing that their talents

are being put to use. We must place a renewed emphasis on basic research. Basic research is the root of all of the great advancements being made in science; humanitarian and military.

The most important consideration in the Soviet Union's ability to surpass us in certain areas of science, languages and technology is the Russian educational system. I want to make it perfectly clear at this point that we as a free Nation should not adopt a dictatorial method as is done in Russia. But their recent achievements have underscored the need for a review of our educational system. We need a renewed emphasis on science and linguistics in our classrooms but this should not be done at the expense of other areas in our education. However, the Soviet Union's substantial lead in numbers of scientists, engineers, and language students must not be allowed to continue.

The young Russian student is given practically no chance to select his own courses. They are chosen for him. In this country our students have a wide choice, limited only by the facilities and staff of each school. All that is required is that they meet basic requirements. Too often experience shows that American students take the easy way out. We cannot force our students to take linguistics, science and engineering courses but we should provide incentives that would spark their interest. This requires new teaching methods, new and improved facilities, more adequately trained instructors in our schools, financial aid at the high-school and college level in this age of ever-increasing costs and a future of greater stability and respect for those in the scientific fields.

By the time a student in Russia has finished his 10th regular school term, he has had 4 years of chemistry, 5 years of physics, 5 years of biology, and 10 years of mathematics.

Soviet students get little chance to examine important problems with a critical eye, or to make up their own minds on issues that may arise. Although this is a major fallacy in the Russian education system it has produced an abundance of capable scientists and engineers who in turn have made it possible for the Russians to make such tremendous advances in missiles and rockets.

Allen Dulles, Director of the CIA, estimated some time ago that during the 10-year period, 1950 to 1960, the Soviets would graduate 1,200,000 in the sciences, while the United States would graduate 900,000. There may not appear to be such a great difference on the surface but it is vitally important to remember that the vast majority of the Russian scientists are being utilized for research and defense efforts directed by the Soviet Government. In the United States our scientists, engineers and technicians go into private industry, devoting many of their talents to peacetime and semiluxury purposes, some are working for our defense effort and others are completely lost in areas where their capabilities are not being used. In Russia the scientists enjoy a great deal of respect in society. In this country they do not universally enjoy such a position.

According to information compiled in a report released in March of 1956 by the Joint Committee on Atomic Energy, the American secondary-school system, as of 1936, was characterized as yielding to no other in the broadness of its democratic pattern and our methods of teaching science on the secondary-school level were more original, varied, and skillful than those in vogue in either France or Russia at that time.

Today the American school system enrolls more than 90 percent of the children from 7 to 16 years of age—a figure exceeding that attained in any other country. However, during the years since 1936, the teaching of the physical sciences in the American secondary schools has suffered a steady decline. Physics and chemistry are now frequently elective 1-year laboratory courses and stress is laid on physical rather than on mathematical thinking. Whether as a corollary or as a cause, the teaching of mathematics at the secondary school level has also declined. To meet this situation many colleges have adjusted their science courses to meet the high-school offerings.

Where does the responsibility rest for this lag in our scientific and engineering program? There is no one person or organization that can be blamed. It is a combination of factors. There is inadequate training and discipline in high schools. Most of our colleges have failed to expand the use of their facilities and to encourage students to complete their courses. Deficiencies in our military draft policies as they affect our college students are an important consideration, for many talented students are placed into routine positions in the armed services where their talents are not utilized.

I think most everyone will agree that ever since the end of World War II the American way of life has required less raw manpower and the demand for technicians, engineers, and scientists has been swiftly increasing. Unfortunately our production of these people in these fields has not met the change.

Prior to the Korean war we had an over abundance of scientists and engineers. But the Korean conflict and the boom in electronics, nuclear energy, and guided missiles transformed the picture. The industrial ratio of engineers to factory workers, which stood at 1 to 250 in 1900, increased to 1 to 60 in 1950 and is rising with every new automation process. In some industries today, the ratio is as high as 1 engineer for every 10 employees.

As never before in our history this Nation's security rests in the hands of its scientists and engineers in the technological frontlines of scientific progress. Nuclear and thermonuclear weapons, intercontinental guided missiles, supersonic jetplanes, radar-warning nets, these are the complex instruments upon which depends our ability to preserve peace and to resist aggression if it should come. To develop these instruments and weapons and to improve them, we need men and women of the highest caliber in both theoretical and applied mathematics, physics, chemistry, and related fields. Basic research is vital to all progress made in these scientific fields.

The United States requires 30,000 to 35,000 new engineers annually; the new production burdens of the cold war require another 3,000 to 4,000 a year. But in 1954 accredited United States schools graduated only 22,000 engineers. At the same time, the Soviet Union graduated more than 53,000. In addition, Russia is graduating far more men in the subprofessional fields of engineering, in the technical areas that are so vital in a technological age. The Russians who produced only about 9,500 engineers in 1928 are now graduating engineers at a rate 2½ times greater than the United States.

In the past several years warnings have been sounded by prominent scientists, educators and statesmen both here and abroad. Despite the numerous speeches, statements and magazine articles which have painted such a dismal picture, very little has been done to remedy the situation. It took the Russian sputniks to really arouse Americans to this challenge. We must plan now for the present and the future in regaining our complete mastery of the sciences.

I have expressed my views on the shortage of scientists and engineers here in the Senate on several occasions. I have been concerned about this shortage for sometime and it is one of the gravest problems that now faces the Congress.

On June 22, 1956, I addressed the Senate on this issue and recommended a 6-point program to meet the shortage of scientists and engineers. I am today restating these six points, because I feel that they would go far in improving the situation.

First. An expanded Federal scholarship program for college and graduate students in the natural sciences and engineering. In order to insure an adequate number of trained personnel in the service of the Federal Government in highly technical and skilled fields I suggest that the Government, under a scholarship program, select a number of high school students each year who have shown special scientific interests and capabilities and underwrite their education. In return these students could be required to put in a period of service after graduation which would be in some way beneficial to our national security, in the military or industry.

Second. Reemphasis on science and mathematics instruction in the high schools of the Nation. This must be a cooperative move between the local school districts and the States' departments of education.

Third. Increased salaries for high school and college instructors.

Fourth. A Federal grant-in-aid program to the States for science and mathematics teachers in the high school somewhat similar to existing Federal aid for certain agricultural and vocational training in the secondary schools.

Fifth. A revised selective service program, making allowances for students and graduates pursuing a career in the sciences and engineering.

Sixth. An improved public relations and security program for scientists, engineers, and technical personnel.

Seventh. This is an additional point. Increased salaries for scientists and

technicians in the employ of the Federal Government so that the temptation to go out into private enterprise will be lessened. This has been partially met by the recent salary increases for scientists as announced by the Civil Service Commission.

This is a cooperative program. We need the help of the States, local and county school officials, and the general public. But the Federal Government must take the lead in meeting the crisis, nothing else will do. Only the Federal Government has the resources and prestige to produce the new emphasis that is needed on the training of qualified young people in the engineering and scientific fields.

In order to keep ahead in the world-wide race of technological advancement, the United States will need a vast and continuing supply of first-rate scientists and engineers. The proposals that I have made will, in my estimation, help to regain American stability and supremacy in the sciences, which will be so necessary in the years to come.

There are a number of things that this legislative body can do.

We can expand and appropriate sufficient funds for the summer training program for high school science and mathematics teachers under the direction of the National Science Foundation.

We can revise our selective-service laws so that consideration is given to those talented in the sciences and engineering. Military service should be secondary to the completion of college work in these instances. While in the armed services their talents should be put to good use.

We can amend our income-tax laws giving parents an additional exemption while sending their children to schools of higher education. This would be of great help in this age of ever-increasing tuition and living costs.

We can enact Federal-aid legislation which would help high schools and colleges improve and add additional laboratory facilities in their science departments.

Finally, we can and must enact a program of graduate and undergraduate scholarship program in the sciences and engineering. An expanded Federal scholarship program would do much to increase our supply of these professionals.

At the present time the Federal Government's role in promoting the education of potential scientists and engineers is generally limited to the National Science Foundation.

The foundation's fellowship system is the most direct means of augmenting the Nation's scientific manpower resources. By awarding fellowships for predoctoral study also, the foundation offers to an average of 600 selected students a year the opportunity to undertake at institutions of their choosing, the advanced training necessary for a career in research.

The foundation has a fine record but its role in the scholarship field is limited. The number of scholarships should be increased and funds should not be limited to predoctoral and graduate work. Direct assistance to students studying in the sciences and mathematics below the graduate level is necessary in order to increase the number of adequately trained scientists and engineers.

A nationwide testing program in our high schools at the sophomore level would be an important start in seeking out the potential student applicants for scholarships to study science and engineering in college. The States' department of education could play an important part in this phase of the program.

I have sent to the desk legislation which would amend Public Law 507 giving the National Science Foundation an expanded role in granting scholarships for study in the sciences. This independent agency is in the best position to put such a program into operation. It is already in operation and my proposal would expand its activities and make available sufficient funds for such a scholarship program. Funds would be made available on an annual basis and could be adjusted to the needs of the Nation.

This is one of a number of proposals which will be submitted to Congress this session. There are those who advocate the appropriation of funds under the Health, Education, and Welfare Department for an elaborate scholarship program. There are those who suggest the formation of a National Science Academy along the line of our military academies. And there are those who would prefer a much more limited program of assistance. This is one of the greatest issues before Congress this session and it is imperative that something be done soon to turn back the tide of Russian supremacy in numbers of scientists and engineers.

A scholarship program of grants will be branded by some as a subsidy. But we should not let this deter us; we subsidize our merchant marine and our airlines for defense purposes and we subsidize our farmers. Why then, should we not subsidize the education of our talented youngsters. It, too, would be in the interest of our country.

The entrance of the Federal Government into the area of aid to education is not without precedent. There has been a Federal-State cooperative program of vocational education since 1917 and it has proved to be highly successful. The Smith-Hughes Act provides for cooperation between the Federal Government and the States in the promotion of vocational education of less than college grade.

Federal funds are available for allotment to the States for agricultural education, distributive education, home economics education, and trade and industrial education. Federal funds are used to stimulate and assist the States in making adequate provisions for such training.

In 1946 the George-Barden Act was enacted to further develop the vocational education program.

The Government cannot legislate scientists into being and we cannot conscript students into these vital fields. We must adhere to the voluntary principle, so important to the American way of life, but I believe, we can attain this goal with the proper incentives.

Occasionally we find people who fear that such a program as I have suggested will create an excess of science personnel. A statement made by John R. Dunning, dean of the School of Engineering at Columbia University is appropriate to refute this position. He stated in a recent New York Times magazine article that "The emphasis on science and mathematics which we need so urgently for defense will be needed anyway, if we are ever to find replacements for our dwindling supplies of fuel and ore, or use our arts of automation to relieve our people of menial repetitive labor. What is military technology today is a higher and more dignified standard of living tomorrow."

The proposal, Mr. President, which I have introduced for appropriate action is not the final answer to the problem that confronts us. It is my hope, though, that what is being offered will be of use to the committee which will consider this proposed legislation, and out of this and other proposals made, a worthwhile solution will be found to overcome our deficiencies in school facilities, in properly qualified teachers, and in the fields of science, technology, and linguistics.

In closing, Mr. President, I want to say that the increased emphasis on training technical and scientific personnel is a matter of national survival and the betterment of future generations. This is a challenge which Congress alone can meet satisfactorily.

The bill (S. 3119) to amend the National Science Foundation Act in order to revise the authority to grant scholarships and fellowships under the provisions of such act, introduced by Mr. MANSFIELD, was received, read twice by its title, and referred to the Committee on Labor and Public Welfare.

Mr. MANSFIELD. Mr. President, in connection with my remarks today on the subject A Challenge to the American Education System, I ask unanimous consent to have printed in the RECORD portions of a letter sent to me by an old friend, Mr. Sid Groff, of the Montana School of Mines, Butte, Mont.

There being no objection, the excerpts were ordered to be printed in the RECORD, as follows:

There is considerable controversy over the failure of our schools to turn out the number of scientists that the Soviet system appears to do. Frankly, I agree with the Vice President on this issue—in that it would be a mistake to go whole hog for scientic training. I would think that the dropping of the Freudian and Dewey educational concepts, and the installations of compulsive and challenging course-work at lower levels would largely take care of the situation. Get a them young—for I doubt if most scientists are created in college—rather I would think that the ideas and desires and abilities were aroused in grade-school and high-school. Along with this, of course, is selection of better teachers, and providing them with a decent scale of living. To sum

all this up, I think our modern school system is not challenging enough (too many easy ways out), and there are too many poor teachers in the system (those with ability and initiative go to better paid jobs). The general population should be made to realize that the teacher spends more time with the budding citizen than anyone except the parents, and in many cases even more time than the parents. There is also a tendency in education institutions to insist on an overwhelming amount of course work in educations subjects to the relative neglect of the relative neglect of the basic material that the teacher is going to actually be teaching. What good does it do—if the teacher is an expert in education and doesn't handle his or her subject with adequacy and in a stimulating manner?

Probably there is an over emphasis on theoretical science in this country. What I'm getting at is that at this time we need a cool-headed practical science outlook. In other words another Thomas Edison, whose genius was not in theory at all, but in the practical application of what the theorists came up with.

MONTANA'S GROWING CONTRIBUTION TO THE ARTS

Mr. MANSFIELD. Mr. President, the State of Montana is a relatively young State, and its contributions to the arts have been somewhat limited. However, in recent years Montana has come into its own.

We have several wonderful museums which are continually expanding and growing in stature. Montana has claim to one of the Nation's most famous western artists, Charles Russell. A number of promising artists are now at work in the State, and our contributions to the field of literature are considerable. The Montana State Historical Society publishes one of the finest quarterlies of its kind, entitled "Montana, the Magazine of Western History," devoted to western folklore and history.

Mr. President, the September 8, 1957, issue of the New York Times Book Section contains J. Donald Adams' report on Montana's contribution to the arts. I ask unanimous consent that it be printed at this point in the CONGRESSIONAL RECORD.

There being no objection, the article was ordered to be printed in the RECORD, as follows:

SPEAKING OF BOOKS

(By J. Donald Adams)

For the past week or so I have been cruising again about Wyoming and Montana. Homeward bound, I watched, from the train window, the Yellowstone snaking eastward on its widening way to join the Missouri. No river save the Missouri itself is as rich in Western history. Countless Indian migrations traced it westward. For many nights its banks were lit by the campfires of Lewis and Clark. Custer rode up them with his 7th Cavalry toward the fatal encounter with the Sioux and Cheyennes on the hills above the Little Big Horn. Up and down across the Yellowstone moved John Colter and Jim Bridger and a legion of trappers and mountain men.

Not even Texans can be condescending about Montana. The distance across its northern counties almost equals that between Chicago and New York. "Montana, High, Wide and Handsome" was the title chosen by the late Joseph Kinsey Howard for his excellent book about the state; the three familiar adjectives were never more fittingly applied.

Of all the Rocky Mountain States, if we omit New Mexico and Arizona, Montana has made the finest regional contribution to the arts of painting and writing. Colorado has one good poet in Thomas Hornsby Ferril, and a promising magazine in The Colorado Quarterly; Wyoming, unfortunately, has yet to make herself felt in the creative arts; Idaho can boast only that Ezra Pound was born there, and that its Caxton Printers at Caldwell publishes valuable Americana; Utah, that it was the birthplace of Bernard de Voto and Mahonri Young.

All over Montana interest in the arts is mounting. Up at Browning, on the edge of Glacier National Park, where I went to watch Indian dances, and to see old friends among the Blackfeet and their Canadian cousins the Bloods, there is a remarkable museum devoted to the culture of the Plains Indians; down in Missoula, creative activity bubbles at the University of Montana; over in Bozeman, the arts are lively at Montana State College. When the visitor moves on to Helena, a State capital whose main street bears the factual name of Last Chance Gulch, he will find that the State Historical Society is doing fine things in constructive commemoration of the old West.

In saying all this about Montana, I feel like a heartless ingrate to say so little about its southern neighbor, for it was in Wyoming that I once had the most amazing fishing in my life, in Wyoming that I first got on familiar terms with a horse, and that I came to appreciate fully the depth of our injustice toward the American Indian. It was also in Wyoming that I witnessed the most profoundly moving religious ritual I have ever seen—the sunrise ceremony of the Arapaho sun dance.

But it is Montana's growing contribution to the arts on which I wish chiefly to report. Five years ago the State historical society opened its museum in Helena, featuring splendidly executed dioramas of western history and housing, besides a fine collection of the paintings and bronzes of Charley Russell, the Montana cowboy whose work as an interpreter of the old West outdistanced, in the opinion of many, that of Frederic Remington. At about the same time, the society founded Montana, the Magazine of Western History, which is doing much the same thing, in a more limited field, as American Heritage. Another recent undertaking is the society's Montana Heritage Series—pamphlets which are maintaining a high level of quality. I have just been reading one of them—Verne Dusenberry's moving account of the Northern Cheyenne, that most hapless of the Plains tribes, whose troubles seem never to cease.

It was my good fortune on this trip to be given a copy of Magpie's Nest, a collection of the poetry of Jason Bolles, one of the most promising of Montana writers, who unfortunately died some years ago at the age of 42. Several years back I reprinted 1 or 2 of his pieces in the poets' column; others appear there today. I regret that space forbids inclusion of one of his longer narrative poems. Several of them have a Robert Frost-like quality, with the difference, of course, that Bolles found his material, not in the New England hills, but in the high country of Montana. The Indians, in whom he was greatly interested, replaced Frost's Yankee farmers.

Bolles also attempted, with some success, a few Amerindian poems in which he tried to bridge the gulf between primitive attitudes and his Anglo-Saxon heritage. One regrets that he did not have a longer span of life in which to develop his gifts. Even so, he left a small body of distinctive verse which drew veracity from the region he knew and loved so well. To forestall inquiries, it is my unhappy duty to add that Magpie's Nest is no longer in print.

OUR CURRENT CRISIS AND THE NEED FOR EDUCATION — COMMENTS ON SPEECH OF SENATOR FULBRIGHT

Mr. DIRKSEN. Mr. President, I was indeed intrigued by the very scholarly address of the distinguished Senator from Arkansas [Mr. FULBRIGHT]. Not the least interesting, of course, was the very first portion of his address, in which he quoted what I believe is the first sentence Abraham Lincoln uttered, in Illinois, in his celebrated "House Divided" speech.

Also, in the second paragraph, the Senator from Arkansas made an allusion to former President Buchanan; the Senator used a very enchanting phrase when he spoke about "continued to spread the contagion of his own confusion over the land."

One thing that has always interested me is the pattern of human behavior which repeats itself year after year and decade after decade and generation after generation.

It was about 100 years ago that our country was confronted with the issue of survival. The question was whether the United States of America would survive as a free, united country. That issue finally had to be resolved by bloodshed. But some very fascinating things happened before that issue was finally resolved.

The Congress then had a Committee on the Conduct of the War; and, on occasions, nearly 100 years ago, the committee undertook to tell the Commander in Chief how he should conduct the war.

At that time there were groups of Congressmen who called for what they denominated a "bold, determined, forward, successful policy in winning the war." There were clamorings for leadership. There was clamor for a policy.

Nearly 100 years ago one of the leading editorials in the New York Times bore, in large type, the caption "Wanted, a Policy."

In New York there was an edi named Horace Greeley, who wielde trenchant pen indeed, and often ass the then President of the United for what Mr. Greeley called the sl of the war effort.

There were congressional comm which, according to the biograph Edwin Stanton, then the Secretar War, were looking for "smells." country was having General trouble 100 years ago. Gen. George B. McClellan, who was nicknamed by some in that generation "Mac-poleon," was made the General in Charge of the Army. If one bothers to read the history of that time, he discovers that hardly a day went by that McClellan was not clamoring for more troops, more money, more supplies, more equipment, more of everything. One hundred years ago Generals were resigning. And, as our distinguished friend, the Senator from Arkansas [Mr. FULBRIGHT], has said, an ex-President was around, to advise and comment. I prefer the language used by my distinguished friend, the Senator from Arkansas, when he said, "A tired and amiable man with tired policies continued to

MEMORANDUM FOR: THE DIRECTOR

See Reverse for Review Action

Attached is a statement by Senator Johnson upon the conclusion of the current series of hearings.

Also included is a statement by Senator Mansfield in which he cites some figures furnished by you on the Soviet science graduates.

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Legislative Counsel

24 January 1958
(DATE)

FORM NO. 1 AUG 54 101 REPLACES FORM 10-101 WHICH MAY BE USED.

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